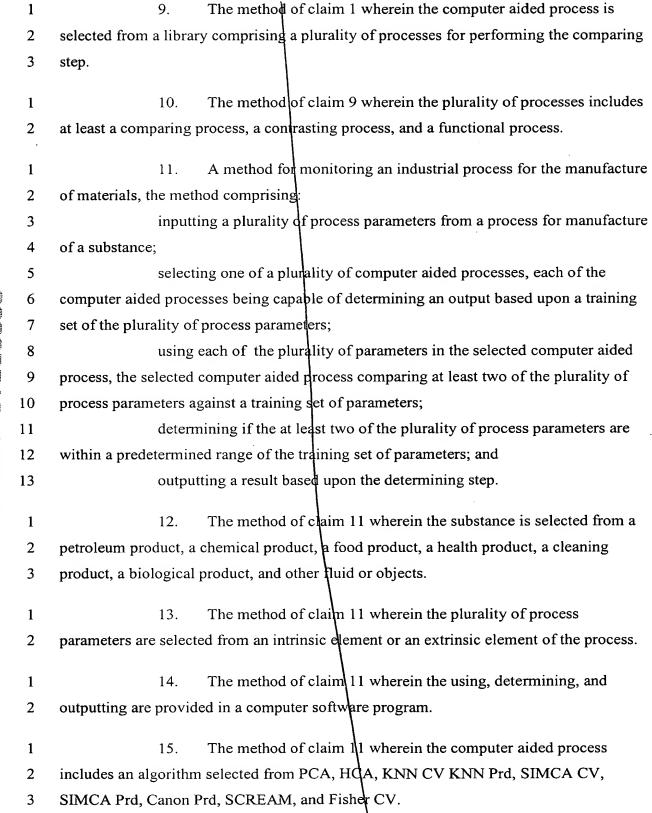


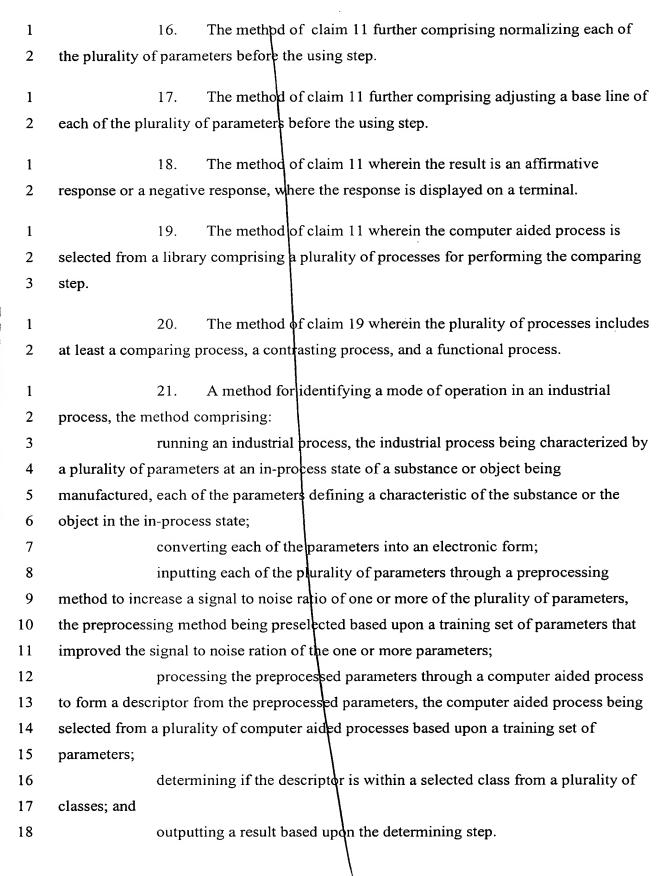
WHAT IS CLAIMED IS:

	1	1. A method for controlling an industrial process, the method
N)	$\frac{1}{2}$	comprising;
\ \M	/3	outputting a plurality of parameters from a process for manufacture of a
	4	substance;
	5	using each of the plurality of parameters in a computer aided process, the
	6	computer aided process comparing at least two of the plurality of parameters against a
	7	training set of parameters, the training set of parameters being predetermined;
	8 .	determining if the at least two of the plurality of parameters are within a
	9	predetermined range of the training set of parameters; and
	10	outputting a result based upon the determining step.
į	1	2. The method of claim 1 wherein the substance is selected from a
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	2	petroleum product, a chemical product, a food product, a health product, a cleaning
	3	product, a biological product, and other fluid or objects.
	1	3. The method of claim 1 wherein the plurality of parameters are
2	2	selected from an intrinsic element or an extrinsic element of the process.
T. T.	1	4. The method of claim 1 wherein the using, determining, and
IJ	1	
(100 m. 100 m.	2	outputting are provided in a computer software program.
	1	5. The method of claim wherein the computer aided process
	2	includes an algorithm selected from PCA, HCA, KNN CV KNN Prd, SIMCA CV,
	3	SIMCA Prd, Canon Prd, SCREAM, and Fisher CV.
	1	6. The method of claim 1 further comprising normalizing each of the
	2	plurality of parameters before the using step.
	1	7. The method of claim 1 further comprising adjusting a base line of
	2	each of the plurality of parameters before the using step.
	1	8. The method of claim 1 wherein the result is an affirmative response

or a negative response, where the response is displayed on a terminal.

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1	22. A method for determining an acceptability of a process, the method
2	comprising:
3	identifying a plurality of process parameters from a process for
4	manufacture of a substance;
5	using one of the selected computer aided processes out of a plurality of
6	computer aided processes, the selected computer aided process being derived from a
7	training set of the plurality of process parameters;
8	determining an acceptability of the process using each of the plurality of
9	parameters in the selected computer aided process, the selected computer aided process
10	comparing at least two of the plurality of process parameters against a training set of
11	parameters; and
12	outputting a result based upon the acceptability of the process.
1	23. A method for monitoring a process, the method comprising:
2	storing a first model in a memory;
3	acquiring data from a process;
4	applying the first model to the data to identify a first predicted descriptor
5	characteristic of a state of the process; and
6	consulting a first knowledge based system to provide an output based upor
7	the first predicted descriptor.
1	24. The method of claim 23 wherein the model is constructed from a
2	mathematical equation describing a physical law.
1	25. The method of claim 23 further comprising preprocessing the data
2	prior to applying the model.
1	26. The method of claim wherein the output is communicated to
2	control the process by adjusting an operational parameter of the process.
1	27. The method of claim 23 wherein the output is communicated to a
2	human operator to permit monitoring of the process.
1	28. The method of claim 23 wherein the output is resident on a server
2	and accessible to a user through a browser software program.
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process.

1	29. The method of claim 28 wherein the input is acquired from the
2	process over a network of computers
1	30. The method of claim 23 wherein the input is acquired from the
2	process over a network of computers
1	31. The method of claim 23 wherein the output is communicated over
2	a network to an associated system, the associated system including at least one of a legac
3	system, an e-enterprise system, and a desktop application.
1	32. The method of claim 23 wherein the first knowledge based system
2	is an expert system.
1	33. The method of claim 23 further comprising:
2	acquiring initial data from a source at a first time;
3	converting the initial data into electronic form;
4	loading the initial data into memory;
5	retrieving the initial data from memory;
6	acquiring subsequent data from the source at a second time;
7	assigning a first descriptor to the initial data and a second descriptor to the
8	subsequent data;
9	constructing the model based upon the initial data, the subsequent data, the
10	first descriptor, and the second descriptor; and
11	storing the model in memory.
1	34. The method of claim 33 wherein the model is constructed from one
2.	of a univariate statistical technique, a multivariate statistical technique, a neural-based
3	approach, and a time series analysis.
1	35. The method of claim 33 wherein the model is constructed from one
2	of a group of different algorithms stored in a library.
1	36. The method of claim 33 wherein the source is in communication
2	with the process, the initial data and the subsequent data reflecting prior operation of the

1	37. The method of claim 33 wherein the source is in communication
2	with a second process similar to the process, the initial data and the subsequent data
3	reflecting operation of the second process.
1	38. The method of claim 33 further comprising:
2	constructing a second model;
3	storing the second model in memory;
4	applying the second model to the process data to identify a second
5	predicted descriptor characteristic of the process data; and
6	consulting the first knowledge based system to produce the output based
7	upon the first predicted descriptor and the second predicted descriptor.
1	39. The method of claim 38 wherein the second model is constructed
2	based upon the initial data, the subsequent data, the first descriptor, and the second
3	descriptor, such that comparison of the first descriptor and the second descriptor
4	represents a cross-validation.
1	40. The method of claim 38 wherein the second model is constructed
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2	from operation of a second process similar to the process, such that comparison of the
3	first descriptor to the second descriptor represents an external validation
1	41. The method of claim 38 wherein the knowledge based system is an
2	expert system.
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1	42. The method of claim 38 wherein a difference between the first
2	predicted descriptor and the second predicted descriptor is resolved by a second expert
3	system.
1	43. The method claim 23 further comprising receiving key preliminary
2	information and communicating the key preliminary information downstream to the first
3	model, such that the first predicted descriptor reflects the key preliminary information.